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(54) Circuit connection structure for a junction block

Kontaktierungsstruktur für Schaltungen eines Verbindungsblocks

Structure de connection de circuit d'un bloc de jonction

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- **PATENT ABSTRACTS OF JAPAN vol. 1997, no. 05, 30 May 1997 (1997-05-30) & JP 09 009457 A (NIPPONDENSO CO LTD), 10 January 1997 (1997-01-10)**
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Description

1. Field of the Invention.

[0001] The present invention relates to a circuit connection structure for a junction block for connecting a circuit conductive portion of a printed-wiring board with a cable conductive portion within said junction block according to claim 1.

2. Description of the Related Art

[0002] From US-A-5,091,826 considered to represent the closest prior art a circuit connection structure for a junction block is known for connection to a circuit conductive portion of a printed wiring board with a cabling conductive portion comprising a slit formed in the wiring board. Land portions are provided on both sides of the slit, at least one of the land portions being connected to at least one of the conductors of the wiring board (the circuit conductive portion) and furthermore an electric wire is disposed to extend between the land portion and is soldered to the land portions. With this known circuit connection structure a pressure connection terminal member is provided having a biting connection groove to connect the wire with the connection structure through the slid.

[0003] A similar connection structure is known from JP-A-9-9457, disclosing a junction block-related product having installed therein various types of electronic components, normally used as a circuit connection structure for connecting a cabling conductive portion within a junction block with a circuit conductive portion on a printed-wiring board 5 on which electronic components constituting an electronic control unit are mounted. To connect the cabling conductive portion with the circuit conductive portion on the printed- wiring board the steps of mounting a connector 3 in which a junction terminal 1 is mounted in a housing 2 on a printed-wiring board 5 with soldering 4 or the like, and connecting a bus bar 6 constituting the wiring conductive portion within the junction block with the junction terminal 1, are performed.

[0004] According to the aforesaid conventional circuit connection structure for the junction block disclosed in JP-A-9-9457, however, a space greater than an actual connecting portion needs to be secured due to the existence of the housing 2 retaining the junction terminal 1, and a problem results therefrom that the enlargement of the junction block is entailed.

[0005] In addition, thermal stress and stress due to vibration is applied differently to the soldered portion 4 where the junction terminal 1 and the printed-wiring board 5 are soldered to each other for every mode of utilizing a junction block having various types electronic control units installed therein, and therefore, a reliability confirmation has been needed.

SUMMARY OF THE INVENTION

[0006] To cope with this, an object of the present invention is to provide a circuit connection structure for a junction block that is intended to reduce a space required for circuit connection and which can improve the reliability in such a circuit connection.

[0007] According to the present invention this object is solved by the features of claim 1.

[0008] Improved embodiments of the inventive circuit connection structure result from the sub-claims.

[0009] According to one aspect of the invention, a plurality of the land portions are provided on each side of the slit in such a manner as to confront each other across the slit, that the electric wire is soldered, respectively, to the plurality of the confronting land portions on each side of the slit, the electric wire each being disposed to extend between the confronting land portions, and that a plurality of the pressure connecting terminal portions are provided for biting on the respective electric wires for connection therewith.

[0010] According to another aspect of the invention, a plurality of the slits are formed in the substrate main body, that the land portions are provided on both sides of each of the plurality of the slits and the electric wire is soldered to the land portions on the both sides of each of the plurality of the slits, the electric wire being disposed to extend between the land portions, and that the pressure connecting terminal member is provided for the respective electric wires for bite connecting therewith.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011]

Fig. 1 is an exploded perspective view showing a main part of a basic circuit connection structure;

Fig. 2 is an explanatory view explaining the assembly of the basic circuit connection structure;

Fig. 3 is an exploded perspective view showing a first embodiment of the present invention;

Fig. 4 is a sectional view showing a first embodiment;

Fig. 5 is an exploded perspective view showing a second embodiment of the present invention;

Fig. 6 is an exploded perspective view showing a third embodiment of the present invention;

Fig. 7 is an exploded perspective view showing a fourth embodiment of the present invention; and

Fig. 8 is a sectional view showing a main part of a

conventional example.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0012] Referring to the drawings, a basic circuit connection structure will be described below. As shown in Figs. 1 and 2, a wiring pattern 11 as a circuit conductive portion is suitably formed on a substrate main body 10a of a printed-wiring board 10, and suitably mounted at predetermined positions on the wiring pattern 11 are electronic components 12 constituting an electronic control unit such as IC's, resistances and capacitors.

[0013] In addition, an elongated slit 13 is formed in a predetermined position on the substrate main body 10, and conducting land portions 14 are formed at positions on both sides of the slit 13 in the surface of the substrate main body 10a. Then, at least one of the land portions is in connection with the wiring pattern 11.

[0014] Furthermore, a single-core wire 15 (electric wire) of a suitable length which comprises a conductive wire having a single core portion is disposed to extend between the land portions 14 formed on the both sides of the slit and is soldered to the land portions 14.

[0015] In this case, the surface mounting method is adopted for soldering the single-core wire 15, and, for example, the single-core wire 15 is mounted on the respective land portions 14 through the flow soldering with cream solder.

[0016] In addition, in Figs. 1 and 2, reference numeral 17 denotes a single-core wire as a cabling conductive portion within a junction block, and a pressure connecting terminal 18 as a pressure connecting terminal member is connected to the s ingle-core wire at a suitable position thereof. In other words, the pressure connecting terminal 18 is constructed as a double-teeth structure in which biting connection grooves 18a are provided on both ends of the pressure connecting terminal 18, which biting connection grooves each have opposite pressure connecting teeth adapted to bite on a coated portion of the electric wire for pressure connection with the core portion of the electric wire. Then, the pressure connecting terminal 18 is bite connected to the single-core wire 17 using the bite connecting groove 18a formed in a lower portion thereof, whereby the pressure connecting terminal 18 is provided on the single-core wire 17 in such a manner as to erect therefrom.

[0017] Then, an upper portion of the pressure connecting terminal 18 is inserted through the slit 13 from below for biting connection with the single-core wire 15 at the upper side bite connecting groove 18a, whereby the wiring pattern 11 of the printed-wiring board 10 and the single-core wire 17 of the junction block are connected to each other.

[0018] As shown In Fig . 2 , when a presser fixture 2 0 extending over the slit 13 for pressing against end portions of the single-core wire 15 Is used in pressure connecting the single-core wire 15 with the pressure connecting terminal 18, it is possible to effectively avoid a risk of stress being generated at a soldered portion where the land portions 14 and the single-core wire 15 are soldered during the pressure connecting of the both members.

[0019] According to the circuit connection structure of the present invention, the housing 2 conventionally used is no longer needed, and hence the structure is advantageous in the economy of space and reduction in the number of components used and space needed for the circuit connection, and the structure also helps make the junction block compact.

[0020] In addition, stress relaxation or stress adjustment can be effected against thermal stress or stress due to vibration by controlling the elasticity of the single-core wire 15 itself mounted on the printed-wiring boar 10 and the length of the single-core wire 15, whereby the reliability can be improved.

[0021] Furthermore, since the conventionally used housing 2 is no longer required, the circuit connection structure can easily be applied to any position on the printed-wiring board, and this improves the degree of freedom in designing cabling for the junction block.

[0022] While the construction is illustrated as an example of the electric wire in which the single-core wire 15 comprising a single conductive wire is used, an electric wire may be used in which the core portion comprises a plurality of twisted wires. In view of the nature of the pressure connecting structure, the single-core wire 15 is preferred.

[0023] A connection structure functioning according to the principle shown in Figs 1 and 2 is disclosed in aforementioned US-A-509 1826.

[0024] Figs. 3 and 4 show a first embodiment of the claimed circuit connection stucture, and like reference numerals are given to constituent components like to those described in the afore said basic circuit connection structure, and the description thereof will be omitted.

[0025] In this embodiment, the slit 13 is formed wider. In addition, the cabling conductive portion within the junction block comprises bus bars 23,24 having a double teeth structure and forming an end portion of a tack conductor, the bus bars disposed, respectively, on upper and lower sides of an insulating panel 22, and an end portion of the bus bar 23 disposed on the upper side is bent upwardly so as to form a pressure connecting terminal 23b as a pressure connecting terminal member comprising a bite connecting groove 23a formed in an upper end of the bus bar end portion at an intermediate position in a transverse direction thereof and having opposite pressure connecting teeth.

[0026] On the other hand, an end portion of the bus bar 24 on the lower side of the insulation panel 22 is formed so as to erect upwardly through the insulation panel 22 to thereby construct a pressure connecting terminal portion 24b as the pressure connecting terminal member comprising a bite connecting groove 23a

formed in an upper end of the bus bar end portion at an intermediate position in a transverse direction thereof and having opposite pressure connecting teeth.

[0027] Then, the upper portions of the respective pressure connecting terminal portions 23b, 24b are inserted through the slit 13 from below for bite connection with the single-core wire 15 using the respective bite connecting grooves 23a, 24a, whereby the wiring pattern 11 of the printed-wiring board 10 and the respective bus bars 23, 24 of the junction block can be connected to each other.

[0028] Even with the circuit connection structure according to this first embodiment, an advantage similar to the advantage obtained with the basic circuit connection structure can also be obtained, and this structure can be applied to an interlaminar connection for the respective bus bars 23, 24. This feature can also help improve the degree of freedom in designing the cabling for junction blocks.

[0029] Fig. 5 shows a second embodiment of the present invention, and like reference numerals are given to constituent components like to those described in the basic circuit connection structure, and the description thereof will be omitted.

[0030] In this second embodiment, the single-core wire 15 is soldered with a through-hole method. In other words, the end portions, of the single-core wire 15 are inserted through through-hole portions formed in the substrate main body 10a for flow soldering thereat.

[0031] In addition, an end portion of the bus bar 26 as a cabling conductive portion within the junction block is bent upwardly to thereby construct a pressure connecting terminal portion 26b as the pressure connecting terminal member comprising a bite connecting groove 26a formed in an upper end of the bus bar end portion at an intermediate position in a transverse direction thereof and having opposite pressure connecting teeth.

[0032] Then, the upper portion of the pressure connecting terminal portion 26b is inserted through the slit 13 from below for bite connection with the single-core wire 15 using the bite connecting groove 26a, whereby the circuit conductive portion of the printed-wiring board 10 and the bus bar 26 of the junction block can be connected to each other.

[0033] Even with the circuit connection structure according to this embodiment, an advantage similar to the advantage obtained with the basic circuit connection structure can also be obtained.

[0034] Fig. 6 shows a third embodiment of the present invention, like reference numerals are given to constituent components like to those described in the above respective embodiments, and the description thereof will be omitted.

[0035] In this third embodiment, the slit 13 is formed into a longer elongated shape, and a plurality of land portions 14 (in this embodiment, three on each side) are provided on both sides of the slit 13 along the longitudinal direction thereof at predetermined intervals in such a manner that the land portions 14 on each side of the slit confront each other. Then, single-core wires 15 are disposed so as to extend between the respective land portions on each side of the slit for soldering thereat.

[0036] The cabling conductive portions within the junction block which are to be connected to the respective single-core wires 15 are constructed in the same manner as those described in the aforesaid respective embodiments, and they are connected to each other in the same manner as those described in the same embodiments.

[0037] Even with the circuit connection structure according to this embodiment, an advantage similar to the advantage obtained with the basic circuit connection structure can also be obtained, and this construction can be used as a substitute connection structure for the conventional connector 3 comprising a plurality of junction terminals 1 provided in parallel within the housing 2, this allowing the omission of a large-scale connector for the economy of space.

[0038] In addition, in a case where the conventional connector 3 is mounted in which a plurality of junction terminals 1 are built in the housing, although a great restriction is imposed on the housing 2 mounting position in designing patterns for the printed-wiring board 10, the embodiment of the invention is free from the restriction, whereby the degree of freedom in designing the cabling for circuits can be improved.

[0039] In this embodiment, the surface mounting method is described as being used for mounting the respective singlecore wires 15, but the through-hole method may be used.

[0040] Fig. 7 shows a fourth embodiment of the present invention, and like reference numerals will be given to constituent components like to those described in the basic circuit connection structure, and the description thereof will be omitted.

[0041] In this embodiment, a plurality of slits 13 are formed suitably dispersedly in the substrate main body 10a, and land portions 14 are provided on each side of the respective slits 13. Single-core wires 15 are disposed so as to extend between the respective confronting land portions on each side of the slits and are soldered thereat.

[0042] Cabling conductive portions provided within the junction block so as to be connected to the respective single-core wires 15 are constructed similarly to those described in the above respective embodiments, and the same conductive portions and the single-core wires 15 are connected to each other in the similar manner to those previously described.

[0043] Even with the circuit connection structure according to this embodiment, an advantage similar to that obtained with the basic circuit connection structure can be obtained, and the connection points to which the respective single-core wires 15 are connected can be determined freely, whereby in designing the wiring pattern 11 on the printed-wiring board 10, the degree of freedom

in designing the cabling pattern can be improved.

[0044] In this embodiment, the surface mounting method is described as being used for mounting the respective singlecore wires 15, but the through-hole method may be used.

[0045] Even in the first to fourth embodiments, an electric wire comprising twisted wires may be used for the single-core wire 15.

[0046] As has been described heretofore, according to the circuit connection structure according to the present invention, the slit is formed in the substrate main body of the printed-wiring board, and the land portion is provided on each side of the slit. At least one of the land portions is connected to the circuit conductive portion, and the electric wire is disposed to extend between the land portions and is soldered thereat. The pressure connecting terminal member provided on the cabling conductive portion is comprised of a bus bar unit having a double teeth structure and forming an end portion of a trac conductor and having a biting connection groove for the electric wire which is bite connected to the electric wire through the slit. This obviates the necessity of the conventional housing and functions to save on space and reduce the number in components used and space required for the circuit connection. In addition, stress relaxation and stress adjustment can be effected against thermal stress or stress due to vibration by controlling the elasticity and length of the electric wire mounted on the printed-wiring board, whereby the reliability in circuit connection can be improved. Furthermore, since the necessity of the housing is obviated, the circuit connection structure can easily be applied to any position on the printed-wiring board, this providing the advantage that the degree of freedom in designing cabling for the junction block can also be improved.

[0047] In addition, the plurality of land portions are provided on each side of the slit in such a manner as to confront each other across the slit, the electric wire is, respectively, disposed so as to extend between the confronting land portions and is soldered thereat, and the plurality of pressure connecting terminal members are provided for bite connecting with the respective electric wires. This circuit connection structure can be used as the substitute connection structure for the conventional connector in which the plurality of junction terminals are provided in parallel in the housing, and this allows the omission of the large-scale connector to thereby save on space. The more the number in polarities to be connected increases, the more the space-economy advantage is exhibited, and the degree of freedom in designing cabling for circuits can be improved.

[0048] Moreover, the plurality of slits are formed in the substrate main body, and the land portions are provided on each side of the respective slits in such a manner as to confront each other across the slit, the electric wire is, respectively, disposed so as to extend between the confronting land portions and is soldered thereat, and the pressure connecting terminal member is provided for bite connecting with the respective electric wires. With this circuit connection structure, the connecting points can freely be determined for the respective electric wires, and the degree of freedom in designing cabling patterns can be improved when designing the wiring pattern on the printed-wiring board.

Claims

1. A circuit connection structure for a junction block for connecting a circuit conductive portion (11) of a printed-wiring board (10) with a cabling conductive portion within said junction block, the connection stucture comprising:

   a slit (13) formed in a substrate main body (10a) of said printed-wiring board (10), conducting land portions (14) being provided on both sides of said slit (13), at least one of said land portions (14) being connected to said circuit conductive portion (11), an electric wire (15) disposed to extend between said at least one land portions (14) and a land portion on the opposite side of the slit (13) and being soldered to said land portions; and

   at least one pressure connecting terminal member (23, 24, 26) provided on said cabling conductive portion and having a biting connecting groove (23a, 24a, 26a) for connection with the electric wire (15) through said slit,

   characterized in that

   said at least one pressure connecting terminal member (23, 24; 26) is comprised of a bus bar unit having a double-teeth structure forming an end portion of a track conductor (23; 26), wherein the biting connection groove (23a, 24a; 26a) is provided on said end portion of the pressure connecting terminal member (23, 24; 26) for biting connection with said electric wire (15).

2. A circuit connection structure according to claim 1, **characterized in that**

   said slit (13) is formed to have a size for receiving more than one pressure connecting terminal members (23, 24; 26) each for connecting to said electric wire (15).

3. A circuit connection structure according to claim 1 or 2, **characterized by** a pressure fixture (20) extending over the slit (13) for pressing against end portions of said electric wire (15), when pressure connecting the electric wire (15) with the pressure connecting terminal member (23, 24; 26).

4. A circuit connection structure for a junction block as set forth in claim 1 or 2 wherein said electric wire

(15) is a single-core wire having a core portion comprising a single conductive wire.

5. A circuit connection structure for a junction block as set forth in claim 1 or 2, wherein a plurality of said land portions (14) are provided on each side of said slit (13) in such a manner as to confront each other across said slit (13), wherein said electric wire (15) is soldered, respectively, to the plurality of said confronting land portions (14), on each side of said slit (13), said electric wire (15), each being disposed to extend between said confronting land portions (14), and wherein a plurality of said pressure connecting terminal members (23, 24; 26) are provided for biting on said respective electric wires (15) for connection therewith.

6. A circuit connection structure for a junction block as set forth in claim 1 or 2, wherein a plurality of said slits (13) are formed in said substrate main body; and
wherein said land portions (14) are provided on both sides of each of said plurality of said slits (13) and said electric wire (15) is soldered to said land portions (14) on the both sides of each of said plurality of said slits (13), said electric wire (15) being disposed to extend between said land portions (14), and wherein said pressure connecting terminal member (23, 24; 26), is provided for said respective electric wires (15) for bite connecting therewith.

Patentansprüche

1. Schaltungsverbindungsstruktur für eine Anschlußleiste zum Verbinden eines leitenden Abschnitts (11) der Schaltung einer bedruckten Leiterplatine (10) mit einem leitenden Abschnitt einer Leitung mit der Anschlußleiste, wobei die Verbindungsstruktur aufweist:

einen Schlitz (13), welcher in einem Hauptkörper (10a) eines Trägersubstrates der bedruckten Leiterplatine (10) ausgebildet ist, leitende Anschlußabschnitte (14), welche an beiden Seiten des Schlitzes (13) ausgestaltet sind, wobei wenigstens einer der Anschlußabschnitte (14) mit dem leitenden Abschnitt (11) der Schaltung verbunden ist, eine elektrische Leitung (15), welche derart angeordnet ist, daß sie sich zwischen dem wenigstens einen Anschlußabschnitt (14) und einem Anschlußabschnitt an der gegenüberliegenden Seite des Schlitzes (13) erstreckt und an den Anschlußabschnitten angelötet ist; und
wenigstens ein Druckverbindungs-Anschlußelement (23, 24, 26), welches am leitenden Abschnitt der Leitung vorgesehen ist und eine schneidende Verbindungsrille (23a, 24a, 26a) zum Verbinden mit der elektrischen Leitung (15) durch den Schlitz hat,

dadurch gekennzeichnet, daß
das wenigstens eine Durckverbindungs-Anschlußelement (23, 24; 26) eine Sammelschienenein heit mit einer doppelzähnigen Gestalt hat, welche einen Endabschnitt einer Leiterbahn (23; 26) bildet, wobei die schneidende Verbindungsrille (23a, 24a; 26a) am Endabschnitt des Druckverbindungs-Anschlußelementes (23, 24; 26) zum schneidenden Verbinden mit der elektrischen Leitung (15) vorgesehen ist.

2. Schaltungsverbindungsstruktur nach Anspruch 1, **dadurch gekennzeichnet, daß** der Schlitz (13) derart ausgestaltet ist, daß er groß genug ist, um mehr als ein Durckverbindungs-Anschlußelement (23, 24; 26) jeweils zum Verbinden mit der elektrischen Leitung (15) aufzunehmen.

3. Schaltungsverbindungsstruktur nach Anspruch 1 oder 2, **gekennzeichnet durch** eine Druckvorrichtung (20), welche sich über den Schlitz (13) erstreckt, um gegen Endabschnitte der elektrischen Leitung (15) zu drücken, wenn die elektrische Leitung (15) mit dem Druckverbindungs-Anschlußelement (23, 24; 26) druckverbunden wird.

4. Schaltungsverbindungsstruktur für eine Anschlußleiste nach Anspruch 1 oder 2, wobei es sich bei der elektrischen Leitung (15) um eine Einzelkern-Leitung mit einem Kernabschnitt handelt, welcher eine einzelne leitende Leitung aufweist.

5. Schaltungsverbindungsstruktur für eine Anschlußleiste nach Anspruch 1 oder 2, wobei eine Mehrzahl der Anschlußabschnitte (14) an jeder Seite des Schlitzes (13) derart vorgesehen ist, um einander über den Schlitz (13) gegenüber zu stehen, wobei die elektrische Leitung (15) jeweils an die Mehrzahl der einander gegenüberstehenden Anschlußabschnitte (14) an jeder Seite des Schlitzes (13) angelötet ist, wobei die elektrische Leitung (15) jeweils derart angeordnet ist, daß sie sich zwischen den einander gegenüberstehenden Anschlußabschnitten (14) erstreckt, und wobei eine Mehrzahl der Druckverbindungs-Anschlußelemente (23, 24; 26) vorgesehen ist, um in die entsprechenden elektrischen Leitungen (15) zur Verbindung hiermit einzuschneiden.

6. Schaltungsverbindungsstruktur für eine Anschlußleiste nach Anspruch 1 oder 2, bei welcher eine Mehrzahl der Schlitze (13) im Hauptkörper des Trägersubstrates ausgestaltet sind; und wobei die Anschlußabschnitte (14) an beiden Seiten eines je-

den aus der Mehrzahl von Schlitzen (13) vorgesehen sind, wobei die elektrische Leitung (15) an die Anschlußabschnitte (14) an beiden Seiten eines jeden aus der Mehrzahl von Schlitzen (13) angelötet ist, wobei die elektrische Leitung (15) derart angeordnet ist, daß sie sich zwischen den Anschlußabschnitten (14) erstreckt, und wobei das Druckverbindungs-Anschlußelement (23, 24; 26) für die jeweiligen elektrischen Leitungen (15) zum schneidenden Verbinden hiermit vorgesehen ist.

Revendications

1. Structure de connexion de circuit d'un bloc de jonction pour connecter une partie conductrice de circuit (11) d'une plaquette de circuit imprimé (10) avec une partie conductrice de câblage à l'intérieur dudit bloc de jonction, la structure de connexion comprenant :

   une fente (13) formée dans le corps principal du substrat (10a) de ladite plaquette de circuit imprimé (10), des parties plates conductrices (14) étant prévues sur les deux côtés de ladite fente (13), au moins une desdites parties plates (14) étant reliée à ladite partie conductrice de circuit (11), un fil électrique (15) disposé pour s'étendre entre ladite au moins une partie plate (14) et une partie plate sur le côté opposé de la fente (13) et étant soudé auxdites parties plates ; et
   au moins un élément de borne de connexion de pression (23, 24, 26) prévu sur la partie conductrice de câblage et possédant une gorge de connexion par sertissage (23a, 24a, 26a) pour une connexion avec le fil électrique (15) à travers ladite fente,

   caractérisé en ce que
   ledit au moins un élément de borne de connexion par pression (23, 24 ; 26) est constitué d'une unité de barre omnibus possédant une structure à double denture formant une partie terminale d'un conducteur de piste (23 ; 26) dans lequel une gorge de connexion par sertissage (23a, 24a ; 26a) est prévue sur ladite partie terminale de l'élément de borne de connexion par pression (23, 24 ; 26) pour une connexion par sertissage avec ledit fil électrique (15) .

2. Structure de connexion de circuit selon la revendication 1, **caractérisée en ce que** chaque fente (13) est formée pour avoir une dimension afin de recevoir plus d'un élément de borne de connexion par pression (23, 24 ; 26), chacun pour une connexion audit fil électrique (15).

3. Structure de connexion de circuit selon la revendication 1 ou 2, **caractérisée par** une fixation par pression (20) s'étendant au-dessus de la fente (13) pour une pression contre les parties terminales dudit fil électrique (15), lors d'une pression connectant le fil électrique (15) à l'élément de borne de connexion par pression (23, 24 ; 26) .

4. Structure de connexion de circuit d'un bloc de jonction selon la revendication 1 ou 2, dans laquelle ledit fil électrique (15) est un fil monoconducteur possédant une partie d'âme comprenant un fil monoconducteur.

5. Structure de connexion de circuit d'un bloc de jonction selon la revendication 1 ou 2, dans laquelle une pluralité desdites parties plates (14) sont prévues sur chaque côté de ladite fente (13) de manière à se faire face à travers ladite fente (13) dans laquelle ledit fil électrique (15) est soudé, respectivement, à la pluralité desdites parties plates se faisant face (14), sur chaque côté de ladite fente (13), ledit fil électrique (15), chacun étant disposé pour s'étendre entre lesdites parties plates se faisant face (14), et dans lequel une pluralité desdits éléments de borne de connexion par pression (23, 24 ; 26) sont prévus pour sertir lesdits fils électriques respectifs (15) pour une connexion avec eux.

6. Structure de connexion de circuit d'un bloc de jonction selon la revendication 1 ou 2, dans laquelle une pluralité desdites fentes (13) sont formées dans ledit corps principal du substrat ; et
   dans laquelle lesdites parties plates (14) sont prévues sur les deux côtés de chacune de ladite pluralité desdites fentes (13) et ledit fil électrique (15) est soudé auxdites parties plates (14) sur les deux côtés de chacune de ladite pluralité desdites fentes (13), ledit fil électrique (15) étant disposé pour s'étendre entre lesdites parties plates (14), et dans lequel ledit élément de borne de connexion par pression (23, 24 ; 26) est prévu pour lesdits fils électriques respectifs (15) pour une connexion par sertissage avec eux.

FIG. 1

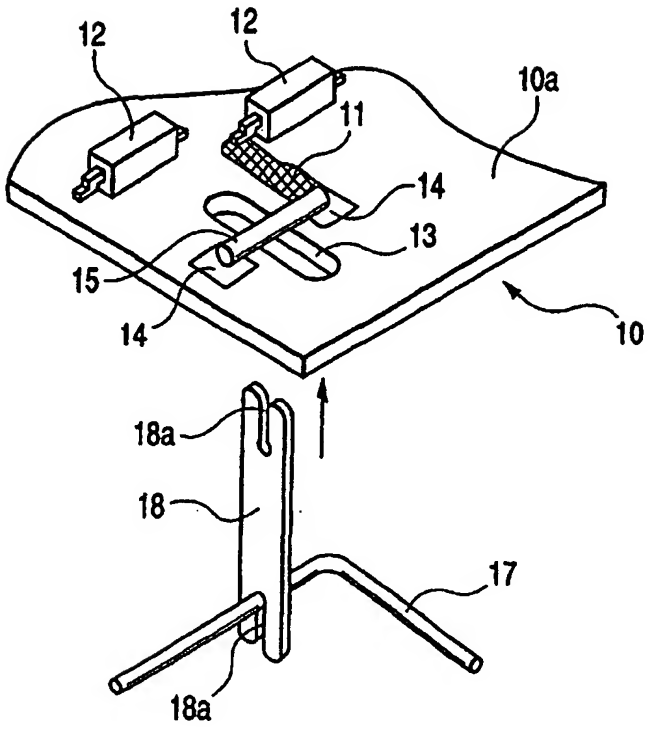

FIG. 2

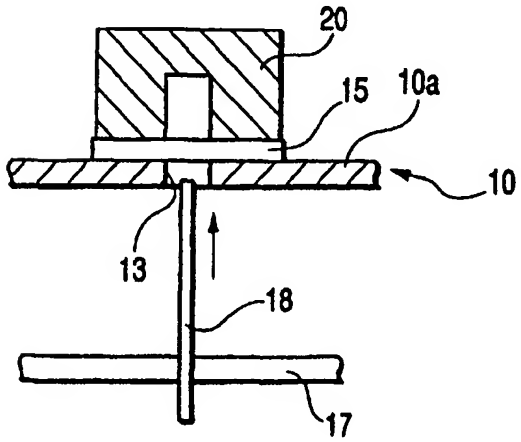

FIG. 3

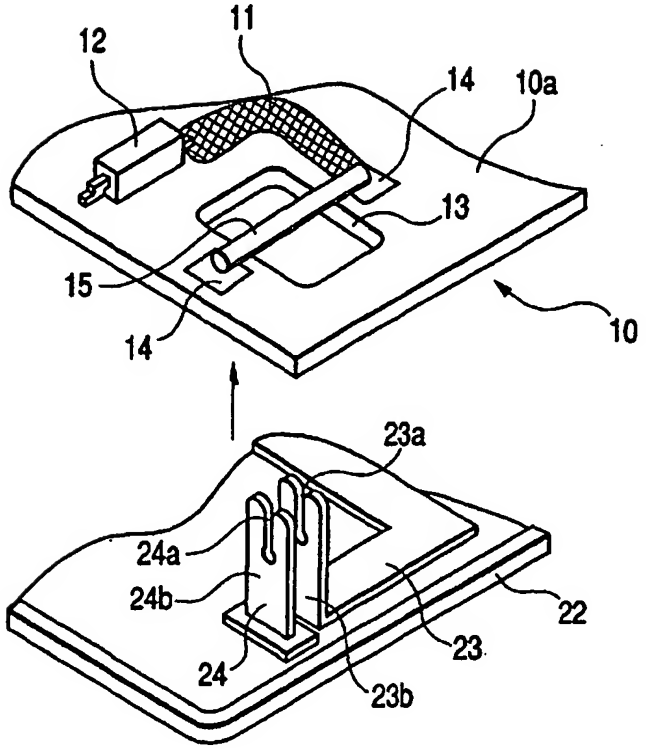
12
11
14
10a
13
15
14
10
23a
24a
24b
22
23
24
23b

FIG. 4

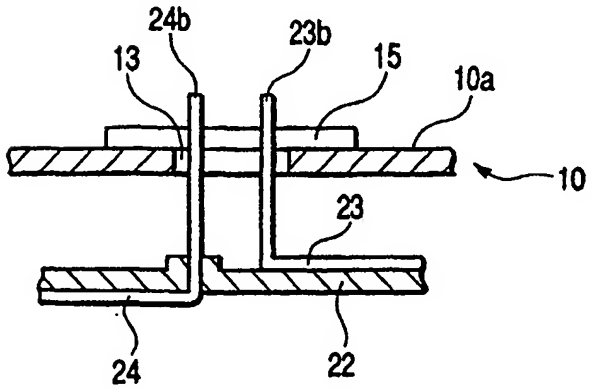
24b
23b
13
15
10a
10
23
24
22

FIG. 5

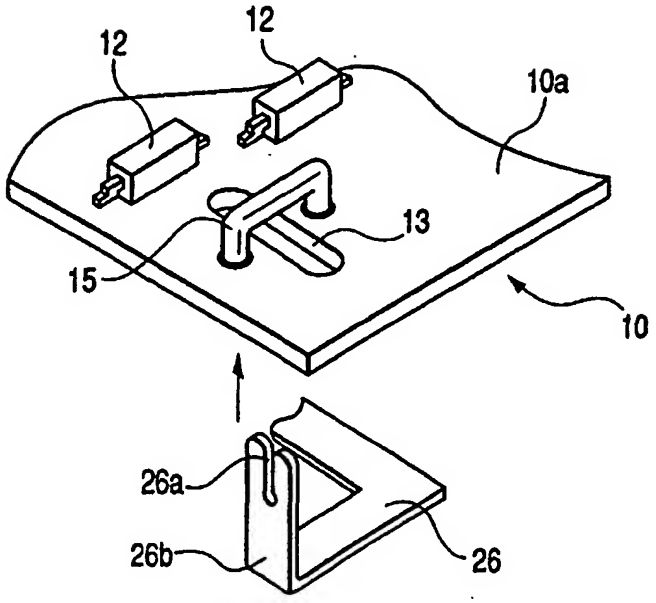
12
12
10a
13
15
10
26a
26b
26

FIG. 6

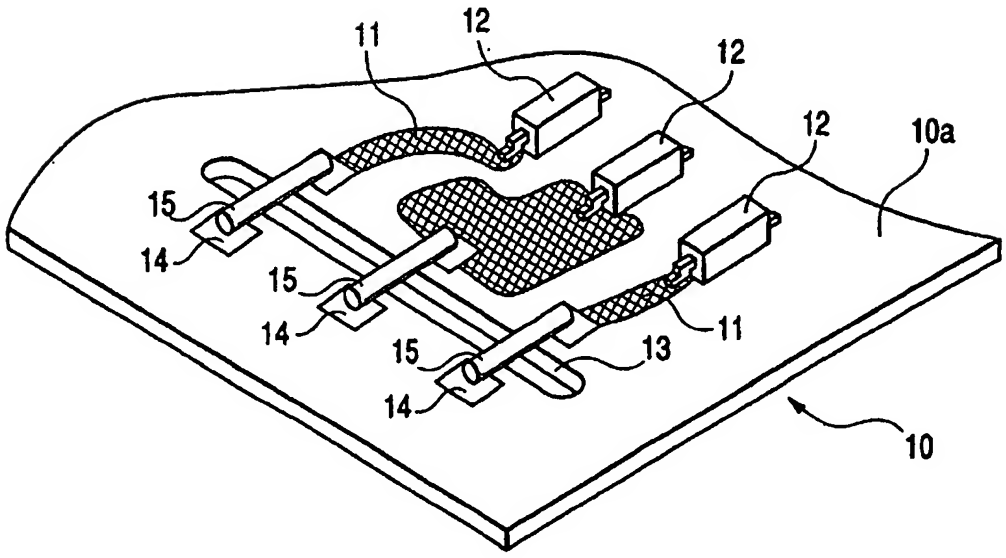
11
12
12
12
10a
15
14
15
14
15
14
13
11
10

FIG. 7

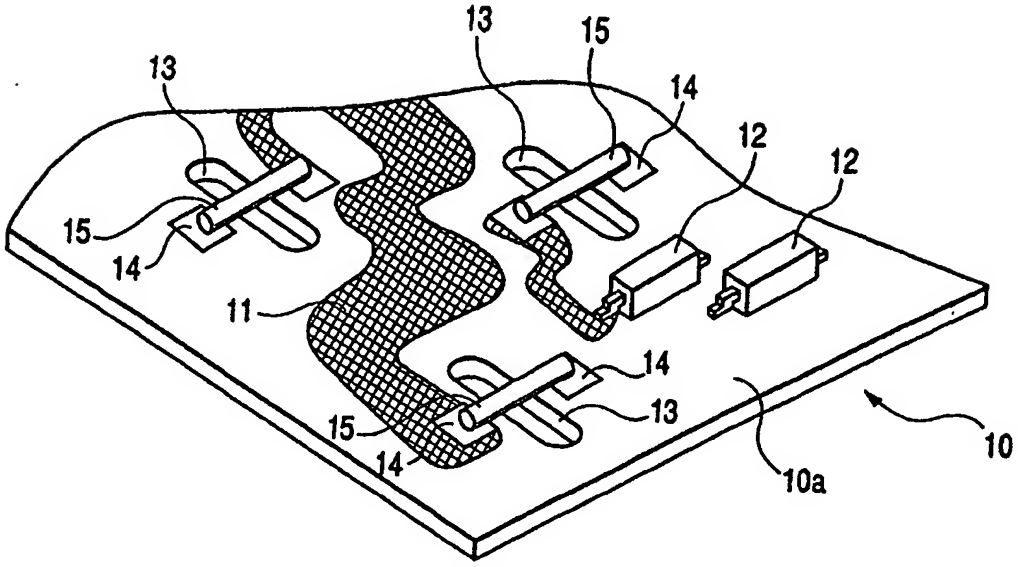

FIG. 8